



INVESTIGATOR'S ANNUAL REPORT

United States Department of the Interior
National Park Service

All or some of the information you provide may become available to the public.

OMB # (1024-0236)
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Reporting Year: 2007	Park: Shenandoah NP	Select the type of permit this report addresses: Scientific Study	
Name of principal investigator or responsible official: Christopher Carlton		Office Phone: 225-578-1838	
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Additional investigators or key field assistants (first name, last name, office phone, office email) Name: Alexey K. Tishechkin Phone: (225)-578-7255 Email: atishe1@lsu.edu			
Project Title (maximum 300 characters): Study of montane forest litter beetles of the Shenandoah National Park			
Park-assigned Study or Activity #: SHEN-00321	Park-assigned Permit #: SHEN-2006-SCI-0005	Permit Start Date: May 02, 2006	Permit Expiration Date: Dec 02, 2007
Scientific Study Starting Date: May 02, 2006		Estimated Scientific Study Ending Date: Dec 02, 2007	
For either a Scientific Study or a Science Education Activity, the status is: Continuing		For a Scientific Study that is completed, please check each of the following that applies: <input type="checkbox"/> A final report has been provided to the park or will be provided to the park within the next two years <input type="checkbox"/> Copies of field notes, data files, photos, or other study records, as agreed, have been provided to the park <input type="checkbox"/> All collected and retained specimens have been cataloged into the NPS catalog system and NPS has processed loan agreements as needed	
Activity Type: Research			
Subject/Discipline: Invertebrates (Insects, Other)			

Purpose of Scientific Study or Science Education Activity during the reporting year (maximum 4000 characters):

This study will complement the ongoing beetle inventories of the Great Smoky Mountains NP (part of the GSMNP All-Taxa Biodiversity Inventory, <http://www.lsu.edu/departments/entomology/lam/smokybeetles.htm>) and the Blue Ridge Parkway NP (NPS study BLRI-00139). The Coleoptera component of the

GSMNP project is funded by a major grant from the National Science Foundation (DEB 0513611) to Carlton and V. M. Bayless. The proposed research will focus on distribution, taxonomy and systematics of several specialized forest litter- and soil-dwelling beetle genera in the families Carabidae, Leiodidae and Staphylinidae. All of these families have representatives with low dispersal abilities (wingless, often blind animals living in deep litter and/or soil), many of which are restricted to particular habitats (e.g., spruce-fir forests on mountain tops). In montane landscapes, these life history features promote the evolution of numerous species with restricted

distributional areas, often limited to particular mountain ranges or mountains.

The primary goal of this study is the discovery and eventual formal description of such restricted beetle species of the families Carabidae (genera Anillinus, Serranillus, Trechus), Leiodidae (Catopocerus) and Staphylinidae (Dasycerus, Geostiba, Parastenus) as well as collecting additional information on described species known to occur in the area. Integration of the data to be collected into comparative systematic and biogeographic analysis will allow addressing several general issues in understanding of the history of southern Appalachian biota and environment, patterns of animal endemism in the region and role of several landscape features as historic and current biogeographic barriers.

Collecting will be conducted by personnel from the Louisiana State Arthropod Museum (LSAM). Methods will include Berlese (litter) extraction and hand-collecting under bark and from exposed surfaces. Collecting will be conducted away from park visitors and with minimal impact to the targeted habitats. The beetle fraction obtained from collections will be sorted at the LSAM to the level of family and selected species within families that the faculty, staff, and graduate students at the LSAM are proficient at identifying. A network of collaborators has been established to facilitate identifications in support of the beetle working group of the ATBI. Data from all identified taxa will be submitted to the National Park's system database and the Southern Appalachian Information Node species webpages project. Identified exemplars will be deposited in a NPS operated collection, as requested by Shenandoah Inventory and Monitoring personnel.

Findings and status of Scientific Study or accomplishments of Science Education Activity during the reporting year (maximum 4000 characters):

A single insect collecting event was conducted July 12-13 2007 as part of a broader study to document the taxonomy of leaf litter inhabiting chrysomelid beetles (leaf beetles) and anilline ground beetles. The latter are of primary interest and constitute two genera of minute, blind, eyeless, surface and subsurface dwelling species.

Sampling of leaf litter beetles (3 samples) was conducted in the vicinity of Hawksbill Mt. This is the locality where a single female Anillinus virginiae was collected during 2006 (single female bringing the total number of specimens known to science to two females). The objective was to collect additional specimens of A. virginiae, especially males. No examples of this species were collected. About 100 beetle specimens were collected, including staphylinid beetles, weevils, leiodids etc.).

Subsequent applications for permits will be made in the future if additional specimens cannot be obtained elsewhere.

For Scientific Studies (not Science Education Activities), were any specimens collected and removed from the park but not destroyed during analysis?

Yes

If "Yes", identify where the specimens currently are stored:

Specimens currently reside at the Louisiana State Arthropod Museum and are undergoing processing (mounting, identification, databasing). Final disposition of specimens will be at the discretion of the curator, Shenandoah National Park.

Funding specifically used in this park this reporting year that was provided by NPS (enter dollar amount):

\$0

Funding specifically used in this park this reporting year that was provided by all other sources (enter dollar amount):

\$500

List any other U.S. Government Agencies supporting this study or activity and the funding each provided this reporting year:

Paperwork Reduction Act Statement: A federal agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. Public reporting for this collection of information is estimated to average 1.625 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the forms. Direct comments regarding this burden estimate or any aspect of this form to Dr. John G. Dennis, Natural Resources (3127 MIB), National Park Service, 1849 C Street, N.W., Washington, DC 20240.